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| 09/696,178      | 10/26/2000  | Koichi Furusawa      | P19724              | 4348             |

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EXAMINER

QADERI, RUNA S

ART UNIT PAPER NUMBER

3737

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/696,178

Applicant(s)

FURUSAWA ET AL.

Examiner

Runa S. Qaderi

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

In response to the amendment filed 11/21/03, all necessary changes to the claims and/or specification have been entered.

***Response to Arguments***

Applicant's arguments filed 11/21/03 have been fully considered but they are not persuasive. Please see "Remarks" for explanation.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 and 3-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The amendment to claims reciting "with respect to the signal processing system" is not supported by the written and/or the drawings at the time the application was filed. Applicant's amendment/remarks filed 11/21/03 (specifically page 8) refer to figure 1 of

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the application for support of the amendment. Examiner respectfully disagrees. Figure 1 of the application does not reasonably convey to one skilled in the relevant art "a driving unit that moves said interferometer unit at least one of towards and away from the object, with respect to the signal processing system". Examiner notes that the limitation to "a driving unit that moves said interferometer unit at least one of towards and away from the object" is fully support by the specification but the additional limitation added by amendment filed 11/21/03 to "with respect to the signal processing system" is not supported or described in the specification and/or drawings. Furthermore the remarks filed 11/21/03 (specifically page 8) are inconsistent with the amendment. Applicant recites "The OCT unit is movable with respect to, e.g., the signal processing circuit 225". Claims recite movement of the interferometer unit while remarks recites the OCT unit movement. Also claims recite movement with respect to signal processing system while remarks recite with respect to signal processing circuit.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, and 3-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boppart et al.

Boppart et al. teaches an endoscope system comprising a light guide having a plurality of optical paths (figure 1), a low coherent light source (10), an interferometer unit including a beam splitter (14) a reference optical system (19), a reflector unit (19), a light detecting device (34), and a signal processing system (38,42), column 2 lines 30-49 and column 5 lines 3-25. The patent also teaches a driving means, figures 4a-I, columns 11-14. Further the Boppart et al. reference teaches utilizing multiple imaging technologies sequentially, in parallel, or simultaneously over the same endoscope such as OCT and fluorescence imaging, column 8 lines 50-67. Boppart et al. teaches translating or moving the optically components of the endoscope system in parallel to the longitudinal axis of the probe, perpendicular to the longitudinal axis of the probe, or both to provide for a more thorough imaging of the specimen, column 5 lines 25-46, column 9, column 11, column 12 lines 59-60, column 15 and 16, etc. The entirety of the patent teaches various mechanical embodiments (driving unit) of the imaging probe to provide for scanning of the x and y axis of the tissue, or surface and depth, respectively. Although the patent does not explicitly recite the language "driving unit that moves interferometer unit" it would have been obvious to a person of ordinary skill in the art at the time the invention was made that to interpret the lens, fibers, mirrors, etc. that are moved by the driving unit of Boppart et al. are components of the interferometer unit as taught by the applicant. The patent is very clear and sufficient in teaching that during the OCT imaging of the tissue a driving unit moves or translate various components of

the OCT imaging system to provide for "depth ranging information of tissue", column 21 lines 28. Not only does the driving unit of Boppart et al. provide for movement of optical imaging components toward and away from tissue but it also allows movement of the components along the surface of the tissue, thereby providing for 3 dimensional imaging of the tissue. Furthermore as the optical imaging components (more specifically OCT components) move, it inherently includes the interferometer unit. Also with the image processing system external to the body, any movement of the endoscopes and/or components of the endoscopes within the body are moved with respect to the image processing system. Boppart et al. patent does not explicitly recite the limitations to "said reference optical system comprises a gradient index optical member whose refractive index is greater at a portion closer to said reflector unit" and "wherein the refractive index of said gradient index optical member, at a beam splitting element side, has the same refractive index as said beam splitting element". It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have alternatively provided the limitations as taught by applicant because the components of the endoscopes system of Boppart et al. performs equally well for in vivo optical examination.

### ***Remarks***

Applicants' core argument with respect to the teachings of Boppart et al. is that it fails to teach or suggest a driving unit to move the interferometer unit at least one of towards and away from an object with respect to the signal processing system.

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Examiner respectfully disagrees. Applicant remarks page 8 include "On the other hand Boppart et al., in column 16, lines 26, as the Examiner indicated, that one method involves translating the 'entire apparatus' in the z depth direction either toward and away from the specimen." This statement alone is support that the Boppart et al. reference does teach and/or suggest the limitation to a driving unit to move the interferometer unit at least one of towards and away from an object because the movement of the entire apparatus inherently includes the interferometer unit. Furthermore as to the "with respect to the signal processing unit", any movement of the endoscopes and/or components of the endoscopes within the body is inherent to be with respect to the image processing system that this external to the body. Since the endoscope and imaging processing system are two separate systems and additionally one is invasive and the other is external, any movement of one is with respect to the other.

### ***Conclusion***

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Runa S. Qaderi whose telephone number is (703) 308-8155. The examiner can normally be reached on Mon-Fri 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dennis W. Ruhl can be reached on (703) 308-2262. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3590.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0858.

*RSQ*

RSQ

  
**DENNIS W. RUHL**  
**SUPERVISORY PATENT EXAMINER**